## Hardware Status - Summary

AMPEX declared that in August - "Sunnyvale hardware was placed in a controlled maintenance environment which has already resulted in identification of some problem areas which has been corrected." This statement indicates that the hardware should be complete and needs no further work other than normal maintenance. The reference, Sunnyvale hardware means the hardware authorized by both contracts [              ]

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Reporting for September and October indicate that the hardware is not performing accurately and that extra shift activity started in order to solve the problems. The October report specifically states that additional engineering changes are expected before shipment.

My opinion is that declaration of the maintenance status for the hardware was premature. There is still a high rate of engineering activity being applied. One can conclude that the hardware is not ready for shipment.

The following part of this paper gives more detail and provides specific information about the hardware being procured under the FFP contract [          ]    **STAT**

### Status of Hardware on Contract [        ]    **STAT**

### May 1975 Activity Reports

AMPEX reporting about the status of hardware indicated that the following hardware modules were complete; DTM1, DTM2, DC1, DC2, TD1, TD2.

The above abbreviations in the report stand for Dual Transport Module (DTM), Data Channel (DC), and Transport Driver (TD).

The Monthly Technical Progress Report for May 1975 made the following statement. "Although the TMS-2 hardware is essentially complete, continual exercise and checkout of the equipment revealed minor discrepancies which require corrective hardware development action."

Although the latter general statement seems to contradict the first, the context of the entire report and the June review meeting left the impression that some of the

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hardware mostly on [        ] was not yet complete but that the specific items mentioned above were complete.

June 1975 Activity Report

The Monthly Technical Progress Report for June activity states the following:

"Accomplishments for June are as follows:

1. Completion and checkout of the AMPEX funded tape dubbing buffer feature."

The dubbing buffer is a part of the Data Channel which AMPEX said was complete the previous month. I don't understand how it is AMPEX funded

August 1975 Activity Report

The TMS-2 Mass Storage System Progress Summary for August 1975 contained the following statements about hardware.

"Authorized work complete except Systems Concepts channel simulators." The channel simulators are a subcontract on [        ]

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"Maintenance only status implemented August 4, 1975." These statements imply all hardware is finished on both contracts with the exception of the channel simulators.

The Monthly Technical Progress Report for August activity states:

"Basic development effort on the hardware has been completed with the exception of the rework of the channel simulator to the final physical configuration."

"Sunnyvale hardware was placed in a controlled maintenance environment which has already resulted in identification of some problem areas which has been corrected."

One of the problem areas concerned the dubbing buffer a feature of the Data Channel.

"Numerous engineering change upgrades have been made to the DSS hardware, including features to support improved tape loading, reliable vacuum sensing, and removal of certain logic overload conditions."

The Monthly Technical Progress Report for September 1975 activity contains the following statements:

"Sustaining activities on the basic development hardware

continue with special emphasis on upgrading all hardware to incorporate the latest Engineering changes."

"Planned system testing at Sunnyvale under the maintenance only environment identified some additional problem areas consistent with our plan to "wring out" the hardware in a test environment."

"During early September, System testing in Sunnyvale indicated a high rate of CCS data accuracy problems. The error source was found to reside in the TBM Data Channel, specifically, Module P. Corrections have been implemented on both Data Channels and preliminary analysis indicates the problem has been solved."

"Extensive DSS data accuracy testing has been performed and several problems were found in which System performance varied from day to day."

The Mass Storage System Progress Summary states: "Authorized work complete except Systems Concepts Channel Simulators."
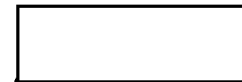
October 1975 Activity Reports

The TMS2 Hardware Development Section of the monthly Technical Progress Report for October Activity states:

"A graveyard shift was implemented in order to provide sufficient hardware reliability for Tape Dubbing Buffer debug."

"DSS Engineering Changes: up-to-date. Additional incorporations expected before shipment."

All of the above excerpts give the impression that the hardware is "complete" except there is considerable "corrective hardware development action." This level of activity is unusual for equipment that has been placed in a "maintenance only status." It is clear that the total hardware configuration is not complete since AMPEX points out that the Dubbing Buffer is still in "debug" status.

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## Tally Track

The rest of this paper on ☐ hardware follows   STAT
the Tally Track feature which AMPEX software personnel
and the TMS-2 project manager personally reported as
incomplete in mid-November.  The Tally Track feature is
part of the Transport Driver.

Reporting for May activity shows that future activity
is planned for a task entitled, "Tally Track Support."  Work
is planned to start the last week in June 1975 and continue
through the third week in July 1975.

The software section of the above referenced report
indicates the software group cannot proceed any further
with its Tally Track effort until the hardware is ready.

Reporting for August activity states that - "All
Tally Track Commands at the TDP level have been activated
and tested."  The TMS2 Hardware Schedule shows the Tally
Track Support task stopping as scheduled at the end of
the third week of July.  When it is remembered that else-
where in the report, we are told the hardware has been
placed in a maintenance only status there is no reason
to believe this particular hardware module (Transport
Driver) is not complete.

Reporting for September activity states that -
"Additional features with regard to tally track error
conditions have been identified as required.  Code and
debug is scheduled for the month of November."

It is clear that the Transport Driver is not complete
because the tally track logic is still being worked.
Accordingly the software group has continually slipped
its schedule for Tally Track software, evidently waiting
for the hardware to be completed.

Reporting for October activity states that - "Additional
features with regard to tally track error conditions have
been identified as required."

It can be seen that the tally track task is still
active and being reported on.  Thus, the Transport Driver
is not complete because of the tally track feature which is
another reason for not being able to ship the hardware as
scheduled.

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